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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,427	08/28/2003	John G. McDonough	TI-34767	7239

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/650,427

Applicant(s)

MCDONOUGH ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 21 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 16-20, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 515 (Fig. 5), 615 and 625 (Fig. 6). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
On page 1, the serial numbers of all related applications should be inserted.
Appropriate correction is required.

Claim Objections

3. Claims 3-5 and 7 are objected to because of the following informalities:
a. Claim 3, line 2, it is not clear if " $t_m t_{m-1} t_{m-2} \dots t_1 t_0$ " is intended to be a sequence, as there are no commas, or a product. Clarification is requested.

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- b. Claim 4, line 3, it appears “correlation length” should be --partial correlation length-- as “partial correlation length” is recited in line 2.
- c. Claim 5, line 2, it is not clear if “ $t_m t_{m-1} t_{m-2} \dots t_1 t_0$ ” is intended to be a sequence, as there are no commas, or a product. Clarification is requested.
- d. Claim 7 recites “the group of buffered chip samples” in line 1. There is insufficient antecedent basis for this limitation in the claim, as only “a group of sampled chips” is previously recited (in claim 6).

Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. Claim 1 recites a method for testing a hypothesis which includes the steps of receiving a hypothesis, determining a start and stop condition, selecting samples, and providing the samples and hypothesis to a correlator. In order for a method to have patentable utility, it must include a practical application that produces a useful, concrete and tangible result (see MPEP 2106 II A). While the claims recite providing samples and a hypothesis to a correlator, the claims do not recite how the samples and hypothesis are processed, and thus the claims are considered to lack utility.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 6, 8-11 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Gronemeyer U.S. Patent 6,304,216.

Regarding claim 1, Gronemeyer discloses a method for testing a hypothesis with a symbol aligned correlation comprising receiving a hypothesis from hypothesis generator 32 (Fig. 2), determining a start and stop condition and selecting samples from a received sequence based on the start condition as GPS processor 84 (Fig. 4) provides a data capture command signal on line 92 to sampling circuitry 74 to provide a selected number of samples 88 based on a frame mark, where each frame has a specified duration thereby providing indication of a start and stop time (col. 9, lines 24-33), and providing the samples and hypothesis to correlator 34 (Fig. 2) (col. 6, lines 12-17).

Regarding claim 2, the start condition (frame marks) may be expressed as a time index modulo N is equal to zero.

Regarding claim 6, the samples are selected from a group of sampled chips of a received sequence (col. 7, lines 3-6).

Regarding claim 8, the samples are selected based on the start and stop conditions (col. 9, lines 24-33).

Regarding claim 9, after a frame mark is detected and an indication is made to select samples (col. 9, lines 24-33), a time period elapses before capture of the sample segment (see Fig. 7).

Regarding claim 10, Gronemeyer states that hypothesis generator 32 generates a plurality of hypotheses, and generates correlation data representative of the correlation between the received segment and the plurality of generated hypotheses, wherein the generation of correlation data involves the determining, selecting and providing steps (col. 6, lines 11-18).

Regarding claim 11, Gronemeyer further discloses that a PN code generator 80 generates the PN code hypotheses which are provided to the matched filter 82 (col. 4, lines 38-41), where a correlation is performed (step 226 – Fig. 9, col. 12, lines 48-50), the correlation results are accumulated (step 228, col. 12 lines 56-58), and the accumulation result is processed (steps 230, 232).

Regarding claims 13 and 14, Gronemeyer further discloses that the accumulation results are compared with a threshold until it exceeds the threshold (col. 4, lines 57-60).

Regarding claim 15, Gronemeyer discloses a circuit in Figure 4 comprising a search control unit (GPS processor 84) coupled to a hypothesis memory, as part of matched filter 82 is disclosed as providing Doppler shift hypothesis to GPS processor 84 (col. 7, lines 29-31, 53-62), the search control unit containing circuitry to provide a start and stop condition for a correlation based on a hypothesis read from the hypothesis memory as GPS processor 84 (Fig. 4) provides a data capture command signal on line 92 to provide a selected number of samples 88 based on a frame mark, where each frame has a specified duration thereby providing indication of a start and stop time (col. 9, lines 24-33), a searcher (portion of matched filter 82) coupled to the search control unit to select a subset of samples from a received sequence stored in sampling circuitry 74 based on instructions (data capture command 92) from the search control unit (col. 7, lines 31-36), and in which a correlation is performed (step 226 – Fig. 9, col. 12, lines 48-50) and the

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correlation results are accumulated (step 228, col. 12 lines 56-58), and a sequence generator (PN code generator 80) coupled to the search control unit 84 and the searcher 82 for generating the pseudo-random number sequence based on the hypothesis (col. 7, lines 27-29).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gronemeyer in view of Kang et al. U.S. Patent 7,130,331.

Regarding claim 12, Gronemeyer discloses a method for testing a hypothesis where an accumulation is performed, as described above, but does not disclose that accumulating comprises both coherent and non-coherent accumulation.

Kang discloses the use of both coherent and non-coherent accumulation in searching a given hypothesis (Fig. 4, col. 5, line 39 to col. 6, line 6). It would have been obvious to one of ordinary skill in the art to perform coherent and non-coherent accumulation as taught by Kang in the method of Gronemeyer because a higher SNR may be achieved for a given hypothesis by combining energy results (derived via coherent accumulator 150 and energy calculator 160) into a noncoherent sum (col. 5, lines 56-59).

9. Claims 21 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gronemeyer in view of White et al. U.S. Patent 6,532,982.

Regarding claim 21, Gronemeyer discloses a wireless device in Figure 4 comprising a GPS receiver 72, an A/D converter (sampling circuitry 74), and a search unit search control unit (GPS processor 84) coupled to a hypothesis memory, as part of matched filter 82 is disclosed as providing Doppler shift hypothesis to GPS processor 84 (col. 7, lines 29-31, 53-62), the search control unit containing circuitry to provide a start and stop condition for a correlation based on a hypothesis read from the hypothesis memory as GPS processor 84 (Fig. 4) provides a data capture command signal on line 92 to provide a selected number of samples 88 based on a frame mark, where each frame has a specified duration thereby providing indication of a start and stop time (col. 9, lines 24-33), a searcher (portion of matched filter 82) coupled to the search control unit to select a subset of samples from a received sequence stored in sampling circuitry 74 based on instructions (data capture command 92) from the search control unit (col. 7, lines 31-36), and in which a correlation is performed (step 226 – Fig. 9, col. 12, lines 48-50) and the correlation results are accumulated (step 228, col. 12 lines 56-58), and a sequence generator (PN code generator 80) coupled to the search control unit 84 and the searcher 82 for generating the pseudo-random number sequence based on the hypothesis (col. 7, lines 27-29).

While Gronemeyer does not expressly disclose the details of the GPS receiver 72, it is well known to one of ordinary skill in the art that a GPS receiver will include a front end for filtering and amplifying a received signal provided by the antenna. For instance, White discloses a GPS receiver that amplifies and filters received signals (col. 6, lines 44-49). Further, Gronemeyer does not disclose a processing unit that contains circuitry to error detect and correct, decode and despread, and filter the digital symbol stream. White discloses a GPS processing unit 66 that receives a digital symbol stream in Figure 5, including circuitry for detecting and

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correcting Doppler error (col. 7, lines 34-45), and decoding, despread and filtering the received signal (col. 7, lines 58-66). It would have been obvious to one of ordinary skill in the art to process the received signals of Gronemeyer using a processor as disclosed by White in order to recover the transmitted information.

Regarding claim 24, the wireless device is shown to operate in a digital wireless network.

Regarding claims 25 and 26, Gronemeyer and White disclose a wireless device operating in a digital wireless network as disclosed above, but do not expressly disclose that the network is a UMTS compliant network or a CDMA2000 compliant network. However, UMTS and CDMA2000 systems are well known in the art and it would have been obvious to one of ordinary skill in the art to implement the device of Gronemeyer and White in a UMTS or CDMA2000 compliant network as a matter of design choice.

Allowable Subject Matter

10. Claims 16-20, 22 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

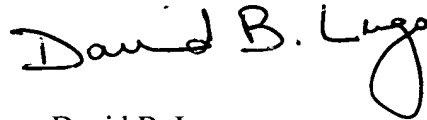
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink that reads "David B. Lugo". The signature is fluid and cursive, with the first letters of each name being capitalized and prominent.

David B. Lugo
Patent Examiner

1/29/07